

Appendix C:

A Community Indicators Study for a Sustainable Blacksburg

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Executive Summary

[A Community Indicators Study for a Sustainable Blacksburg](#)¹ presents information about Blacksburg that can be used to gauge the overall health and sustainability of the community. It also can help officials and residents make informed decisions about the future. In developing this report, Blacksburg was divided into the eleven topic areas of population, environment, resource use, land use, housing, transportation, public safety, economy, society, recreation, and education. For each of these topic areas, sets of indicators were developed to measure important aspects of the community. The information from these indicators can be used to understand current relationships among environment, economy, and society as well as emerging trends. The indicators also were developed with the intent that in the future, they can and will be altered and improved upon to reflect changing needs and priorities. While this project is directly related to the Town of Blacksburg, other small communities can use the indicators and data sources that are presented as a template for their own indicator projects.

Introduction

This report begins with a brief introduction to the Town of Blacksburg. This is included so that non-residents will have a context for this report. Explanations of sustainable community development and the roles and purposes of indicators are presented, as are the methods that were used to collect data. The report contains separate sections for the 11 sets of indicators and includes a total of 85 indicators. Each indicator section includes a summary of the topic area, a case study of one or more communities that used similar indicators, and a detailed presentation of the data and discussion of the findings that were obtained for each indicator. The report ends with a summary of findings and an overview of how this report can be used in the future. The trends and analyses that are presented will be most useful if stakeholder groups within the community combine a variety of indicators from different sections to understand general trends and interrelationships. For example, residents could use environmental, resource, land-use, and educational indicators to assess and promote environmental awareness. Alternately, elected officials could use data from economic and social indicators to identify trends in the economy and set policies that will help keep local dollars within the Town.

Population

Population is the first topic area addressed in the study. From 1990 to 2000, the population of Blacksburg excluding the on-campus residents of Virginia Tech increased by 3,977, or 15.1 percent. As Virginia Tech students living on-campus are traditionally included in population counts for the town, subtracting the on-campus population from that of the entire town provides

¹ *A Community Indicators Study for a Sustainable Blacksburg*. Public and Urban Affairs Seminar (UAP 4914) and the Environmental Policy and Planning Seminar (UAP 4364) under the supervision of Dr. JoAnn Carmin. Spring 2001

the number of individuals living within the Town of Blacksburg and upon lands that are not owned by the university. In both years 1990 and 1998, the 15-24 year age group composed the greatest percentage of the town's overall population at 55.42 and 55.41 percent, respectively. The next largest age groups, in descending order, were 25-34 years, 35-44 years, 45-59 years, 5-14 years, under 5 years, 65 years and older, and the 60-64 years age group. From 1990 to 1998, each of these age groups increased in size by approximately 11.3 percent. Only the 60-64 year age group deviated from this norm at a growth of only 3.85 percent. Population density in Blacksburg increased from 1,400.59 persons per square mile in 1990 to 1,546.33 persons per square mile in 1999. The greatest increase in density over this period of time took place between 1997 and 1998, as density per square mile increased from 1,385.59 to 1,537.91.

Environment

The second section of the report focuses upon the local environment. Rides per capita on Blacksburg Transit followed an erratic pattern of increase and decline from 1990 to 2000, with the highest annual per capita usage of this local mass transit provider being 49.3 in 1993. 1999 and 2000 ridership totals ranked second and third highest, respectively. The amount of coal burned by the Virginia Tech Power Plant also varied from 1990 to 2000. At nearly 24,5000 tons, the amount of coal burned in 2000 was the lowest since 1990. The greatest tonnage of coal has historically been burned in the months of January and December, and peak demand for heat, electricity, and/or steam in those months has been increasing over time. Annual sales of electricity to all sectors in Blacksburg continued to rise in each year from 1992 to 1999. The consumption of electricity per household in Blacksburg increased by slightly more than 4 percent from 1992 to 1999, with usage peaking in 1996. Overall levels of pollution in Stroubles Creek increased from 1996 to 2000, though levels began to decline in the Fall of 2000. Compared to Sinking Creek, and according to DEQ standards, Stroubles Creek is "severely impaired."

Resource Use

From 1998 to 2000, the resource use research team found that per capita water usage in Blacksburg has fluctuated. Water consumption peaked in February of 1999 at nearly 250 gallons of water per capita per day. An average of 150 gallons of water per person per day were consumed in Blacksburg over this three-year period. Though levels of precipitation and water consumption are fairly similar in many months, notable differences in select months were identified in the year 2000. The amount of wastewater treated each year in Blacksburg also fluctuated, though the general trend since 1990 has been an increase in the overall daily average. The wastewater treatment plant currently operates at approximately 60 percent of total capacity, though the remaining capacity has been declining since 1999. From 1998 to 1999, the percent of all energy distributed to the residential sector of Blacksburg remained steady at 45 percent. Over this same period, the percent of all energy consumed by the commercial sector of town also remained steady at 55 percent. Solid waste generation per capita in Blacksburg declined from .2 tons in 1997 to .19 tons in 1999. At the same time, the percent of total solid waste recycled annually has declined since 1996 and decreased by nearly 8 percent since 1998.

Land Use

The next section of the report focuses upon land use. From 1990 to 1999, an average of one acre of undeveloped land was lost in Blacksburg for each additional 7.3 persons that were added to the local population base. The average number of persons per household in town fluctuated

slightly from 1980 to 2000, with a high of 2.43 in 1980 and a low of 2.36 in 1990. Since 1990, the general trend has been an increase in persons per household. As a percent of total acreage, single-family residential acres increased from 11.8 percent in 1980 to 21.4 percent in 1996. Average lot size for the single-family unit in Blacksburg increased from .495 in 1980 to .7 in 1995. Acres of undeveloped land increased from 4,295 (36.1%) in 1980 to 5,678 (47.2%) in 1995. Acres of vacant and agricultural lands also increased from 6,058 (50.9%) in 1980 to 6,354 (52.8%) in 1995.

Housing

Concerning housing, Blacksburg was found to have fewer housing units per 1,000 people than are found in either Charlottesville or Harrisonburg. The total number of housing units in Blacksburg increased from 11,906 in 1990 to 13,134 in 2000. At 1,444 units, most of the housing units in town ranged in price from \$50,000 to \$99,999 in 1990. In that same year, 7,644 housing units were rental, 3,531 were owner occupied, and 682 were vacant. Also in 1990, the vast majority (5,522) of all rental units were priced in the range of \$250 and \$499 per month. Median rent in Blacksburg in 1990 (\$365) was less than that in the state of Virginia (\$411), the United States (\$374), and Charlottesville (\$391), but higher than that in Harrisonburg (\$341). From 1996 to 2000, a total of 374 new single-family and 542 multi-family residential structures were constructed in the town. Over this same time period, permit applications were received for 374 single-family structures and 76 multi-family structures (542 units). From 1980 to 2000, the average sales price of single-family homes in Blacksburg increased at a much greater rate than did the median family income. In 2001, the cost of a single-family home in Blacksburg was found to be higher than the cost of a single-family home in Christiansburg, Radford, and Montgomery County. With 485 units, Blacksburg has more Section 8 housing opportunities than Charlottesville (464) but fewer than Harrisonburg (586). In April of 2001, an average of 35 persons resided in emergency homeless shelters in Blacksburg, compared to 70 in Harrisonburg and 90 in Charlottesville.

Transportation

Transportation is the next topic area address in the study. In 2000, a total of 15 miles of bike trails existed in Blacksburg. In that same year, there were a total of 421 metered parking spaces in the downtown section of Blacksburg. Vehicle accidents in town increased from 756 in 1998 to 823 in 2000, with a total of 824 accidents taking place in 1999. By month, the fewest number of accidents have occurred in June and July since 1997, while the greatest number of accidents have taken place in the months of April, September, October, and November. In each of the years 1998 to 2000, more than 90 percent of all accidents have occurred on roadways that are free of defects, while just over five percent have been the result of slick pavement. Traffic count data demonstrates that the stretch of road from Upland to Ellett is the busiest section of Main Street with just less than 20,000 vehicles per day, while the section from 460 to Broce is the least heavily traveled with 6,000 vehicles per day. The total number of rides provided by Blacksburg Transit increased from 1,476,568 in 1991 to 1,889,640 in 2000. Total operating expenses of Blacksburg Transit have also continually increased on an annual basis since the 1990-91 fiscal year. The number of paratransit trips per year provided by Blacksburg Transit fluctuated from 1993 to 2000, with the greatest usage being 12,400 trips in 1998.

Public Safety

The public safety research team found that assault was the most frequently committed violent crime in Blacksburg from 1994 to 1998. Over that period, the number of most violent crimes committed remained relatively static. Larceny was the most frequently committed non-violent crime over the same five-year period. Non-violent crimes substantially outnumbered violent crimes in each year from 1994 to 1998. Clearance rates for the Blacksburg Police Department remained in the 40 to 55 percent range from 1993 to the 1999/2000 fiscal year. Domestic assaults in Blacksburg increased in number from 1998 to 2000 after declining in 1999. From 1996 to 1999, the number of traffic accidents per 1,000 involving cyclists and/or pedestrians fluctuated, and declined from 22 accidents in 1999 to 18 in 2000. Alcohol related accidents decreased substantially from 1996 to 1997, after which time the number of accidents continued to increase through 1999. Deer related accidents per 1,000 persons peaked at nearly 2.25 in 1997, but decreased over the 1996 to 1999 time period. The Blacksburg Police Department was composed of 1.18 sworn officers per 1,000 residents in 2001, which was higher than the national average (.68/1,000) yet lower than other select communities. Results of a citizen satisfaction survey illustrate that the vast majority of town residents are satisfied with the local police department. Likewise, results of a safety survey suggest that most all residents of the town felt safe and secure.

Economy

Over the 1992 to 1998 period of time, the economy group found that total retail sales in Blacksburg fluctuated (in 2000 dollars). However, the value of sales over this period remained relatively steady at approximately \$195 million. By district, sales in the University Mall area of town exceeded all other areas from 1992 to 1998, the North Main and Downtown districts experienced decline, and the South Main district experienced substantial growth. Concerning the number of new building permits issued from 1997 to 2000, the greatest number (131) was issued in 1998 and the fewest (44) in 2000. The business, personal, and repair services sector, the largest in Blacksburg, accounted for 46.8 of all business licenses issued from 1998 to 2001. From 1990 to early 2001, a total of 12 new retail developments were constructed in Blacksburg. The unemployment rate in town decreased from nine percent in 1991 to 2.3 percent in 1999. Comparing the number of tax returns filed, a greater or equal number were filed in each of four income brackets in 1998 than were filed in 1997.

Society

The next section of the report focuses upon society. In each of the years 1980, 1990, and 2000, the vast majority of the local population was white. At the same time, however, all other races as a percent of total population continued to increase with the passage of time. Christianity is the dominant form of religion in Blacksburg, with nearly 80 percent of all local churches being a member of a Christian denomination. From 1995 to 2000, attendance at the Museum of Natural History at Virginia Tech declined from just below 6,000 to slightly greater than 2,000. On-site participation at the same institution has continually outnumbered Gallery attendance in each of the past six years. The budget for special events in Blacksburg as a percent of the total general fund budget has continued to decline since 1991. The annual number of parades within town limits remained fairly constant from 1998 to 2000, with some variation appearing in regards to the months in which parade permits were issued. Over this same three-year period, the number

of resolutions granted for fairs and festival, as well as the number of approved banner requests for cultural events declined. A total of 54 nonprofit and charitable organizations were found in Blacksburg in 2001.

Recreation

Recreation serves as the focus of the next section of the report. In 2000, three percent of the total landmass of Blacksburg was dedicated to parkland, compared to seven percent in Harrisonburg and 14 percent in Charlottesville. From 1968 to 2000, the total number of park acreage increased by 321 acres. Blacksburg had 10.8 acres of parkland per 1,000 people in 2000, which is less than the 18.5 acres in Harrisonburg and 20.6 acres in Charlottesville. Also in 2000, five neighborhood parks existed in Blacksburg, fewer than the six found in Harrisonburg and 10 in Charlottesville. A total of 20 miles of recreational trails existed in Blacksburg in 2000, only three in Charlottesville and 15 in Harrisonburg. Usage of the local community center remained relatively static from 1990 to 2000, usage of the aquatic center declined, usage of the municipal golf course more than doubled, and visitors to the Kipps gymnasium declined by nearly 17,000 from 1994 to 2000. The town has consistently increased the amount of funding provided to the Department of Parks and Recreation since 1995, while the percent of the town budget allocated to the Department increased from 1992 to 2000. Costs of select recreational programs tend to be higher in Blacksburg than in Harrisonburg or Charlottesville.

Education

The final section of the report involves measures of education health in Blacksburg. Following the 1999-2000 school year, 82 percent of high school seniors graduated. From 1996 to 2000, the operating cost per student per year increased by nearly \$700. The student/faculty ratio for Blacksburg High School was 18:1 during the 1999-2000 school year, compared to a ratio of 20:1 for all other local public schools. Over the 1997 to 2000 time period, the percent of students graduating to college ranged from a low of 64 in 1999 to a high of 77 in 1998. Dropout rates for Blacksburg High School dropped from approximately 4.25 percent in 1994 to just over three percent in 1999. The education research team also found that adult education and alternative learning opportunities are available in Blacksburg.

Conclusion

This report should be considered a living document that can be molded and shaped over time to respond to the changing needs and priorities of Blacksburg's residents. The indicators presented were designed to represent current trends within the community and to serve as the foundation for continuing data collection in future years. Blacksburg is encouraged to consider these findings, update the indicators on an annual basis, and to formulate additional indicators that will help local officials and residents alike to make informed decisions that will contribute to the successful achievement of a healthy and sustainable local community. Additional indicators could also be formulated to monitor and measure those aspects of the Blacksburg Comprehensive Plan that are deemed to be most important in the community both at the present time and throughout the future.